FELDMAN Z. A.

Novocaine (procaine) block in lead poisoning Klinicheskaya Meditsina 1947, 1

4434 In 45 cases of oliguria, lead colic and other forms of entero-gastric dyskinesia, infiltration of the left perirenal tissues with 60 ml 0.5 per cent procaine gave gratifying results.

Van der Molen - Terwolde (SecVI)

SO: Section II Vol. 1^2 No. 7-12

TSEYTLIN, A.A.; FEL'DMAN, Z.D.; BUZNITSKIY, Ye.V.; DEKHTYAR, E.M.

Machine for making curvilinear reinforced concrete products. Suggested by A.A.TSeytlin, Z.D.Fel'dman, E.V.Buznitskii, E.M.Dekhtiar. Rats. i izobr. predl. v stroi. no.15:41-43 '60. (MIRA 13:9)

1. Po materialam Tekhnicheskogo upravleniya Ministerstva stroitel'stva USSR.

(Concrete panels)

Fel'dman, Z.G.

KIRICHENKO, T.F.; FEL'DMAN, Z.G.

Record of trees and shrubs in the territory of the Veliko-Anadol' Forest. Nauk.zap.Dnipr.un. 48:227-239 '55 (MIRA 10:11)
(Ol'ginka District--Trees) (Ol'ginka District--Shrubs)

SANDLER, N.I.; DOBRUSKINA, Sh.R.; ZAYKOV, S.T.; FEL'DMAN, Z.N.; ASNIS, A.Ye.; NAZARENKO, A.N.

Converter low-alloys steel with niobium for welded structures. Avtom. svar. 17 no.2:43-48 F '64. (MIRA 17:9)

1. Ukrainskiy institut metallov (for Sandler, Dobruskina, Zaykov, Fel'dman). 2. Institut elektrosvarki im. Ye.O. Patona AN UkrSSR (for Asnis, Nazarenko).

FELDMAN, Z. YA.

USSR/Microbiology - Antibiosis and Symbiosis. Antibiotics. F-2

Abs Jour : Ref Zhur - Biol., No 5, 1958, 19433

Author : Feldman, Z.Ya.
Inst :
Title : Utilization of Antibiotics in Storing Lemon.

Orig Pub : Tr. Leningr. tekhnol. in-t kholodilin. prom-sti, 1956, 10, 72-73

Abstract : Antibiotic preparations were obtained by the method of N.V. Novotelnov from dog-rose fruit and bran. Antibiotics from bran were obtained with and without fermentation. These preparations when used with ascorbic acid exert high bactericidal properties, inhibit development of brown spots on lemons, and prevent spoilage of fruit to a considerable degree when it is stored at 13-15° for a period of 3 months. Most active was an antibiotic obtained from bran after fermentation. In its presence lemons were fully preserved at

Card 1/2 Leningrad kholodil'nika Glavnogo upravleniya gastronomicheskikh bakaleynykh magazinov

USSR/Microbiology - Antibiosis and Symbiosis. Antibiotics. F-2

Abs Jour : Ref Zhur - Biol., No 5, 1958, 19433

16-22° for a period of 2½ months, while the majority of the control lemons became moldy after 10 days.

Card 2/2

SHVARTS, K. [Svarcs, K.]; FELDMANE, [illegible].

Microscopic studies of the defects in alkali-halogenous crystals by the evaporation method. Izv. AN Latv.SSR no.9:57-59 '63. (MIRA 16:12)

1. Institut fiziki AN Latviyskoy SSR.

ACC NR: AP7005269 SOURCE CODE: UR/0371/66/000/006/0101/0102

AUTHOR: Kalnin', D. O.; Shavrts, K. K.; Feldmane, E. E.

ORG: Physics Institute, AN Latvian SSR (Institut fiziki AN LatvSSR)

TITLE: Dislocation density and radiation expansion in crystals

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 6, 1966, 101-102

TOPIC TAGS: lithium fluoride, ~~radiation~~ crystal expansion, crystal dislocation, neutron irradiation, plastic deformation, crystal defect

ABSTRACT: Radiation expansion and point defects in crystals were studied experimentally. LiF crystals (10 x 10 x 2 mm) grown in a 10^{-4} ton vacuum were used. Dislocation density, determined by $FeCl_3$ etching, was 10^4 cm^{-2} for non-worked samples, and 10^6 cm^{-2} after plastic deformation at 1000K. The samples were irradiated with doses of 4.10^{14}—4.10^{17} neutrons/cm^3. At low doses fractional volume expansion decreased slowly with increasing dislocation density; at high doses no effect was detected. The results indicate that an increase in dislocation density from 10^4 to 10^6 cm^{-2} has little effect on the radiational change in the volume in the range up to 5×10^{16} neutrons/cm^3. This suggests that dislocations play an unimportant role in the crystal expansion. Orig. art. has: 1 figure. [JM]

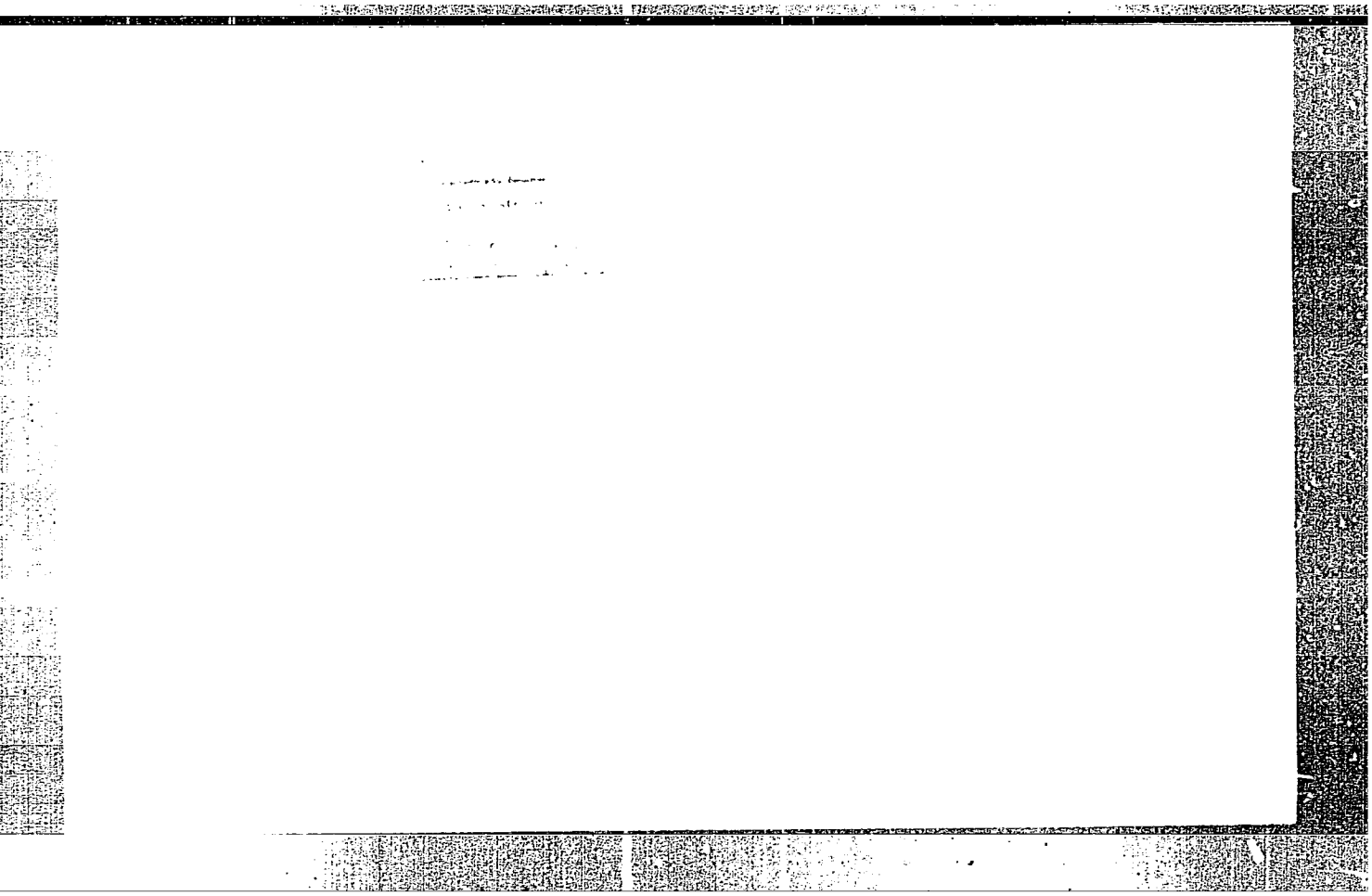
SUB CODE: 20/ SUBM DATE: none/ ATD PRESS: 5115

Card 1/1 UDC: none

FEL'DMAN-RABAK, Tamara Petrovna; SURYGINA, E., red.; NEMCHENKO, I., tekhn.red.

[Outdoor swimming pools] Otkrytye iskusstvennye basseiny dlia plavaniia. Kiev, Gos.izd-vo lit-ry po stroit. i arkhit. USSR, 1960. 161 p. (MIRA 13:12)

(Swimming pools)



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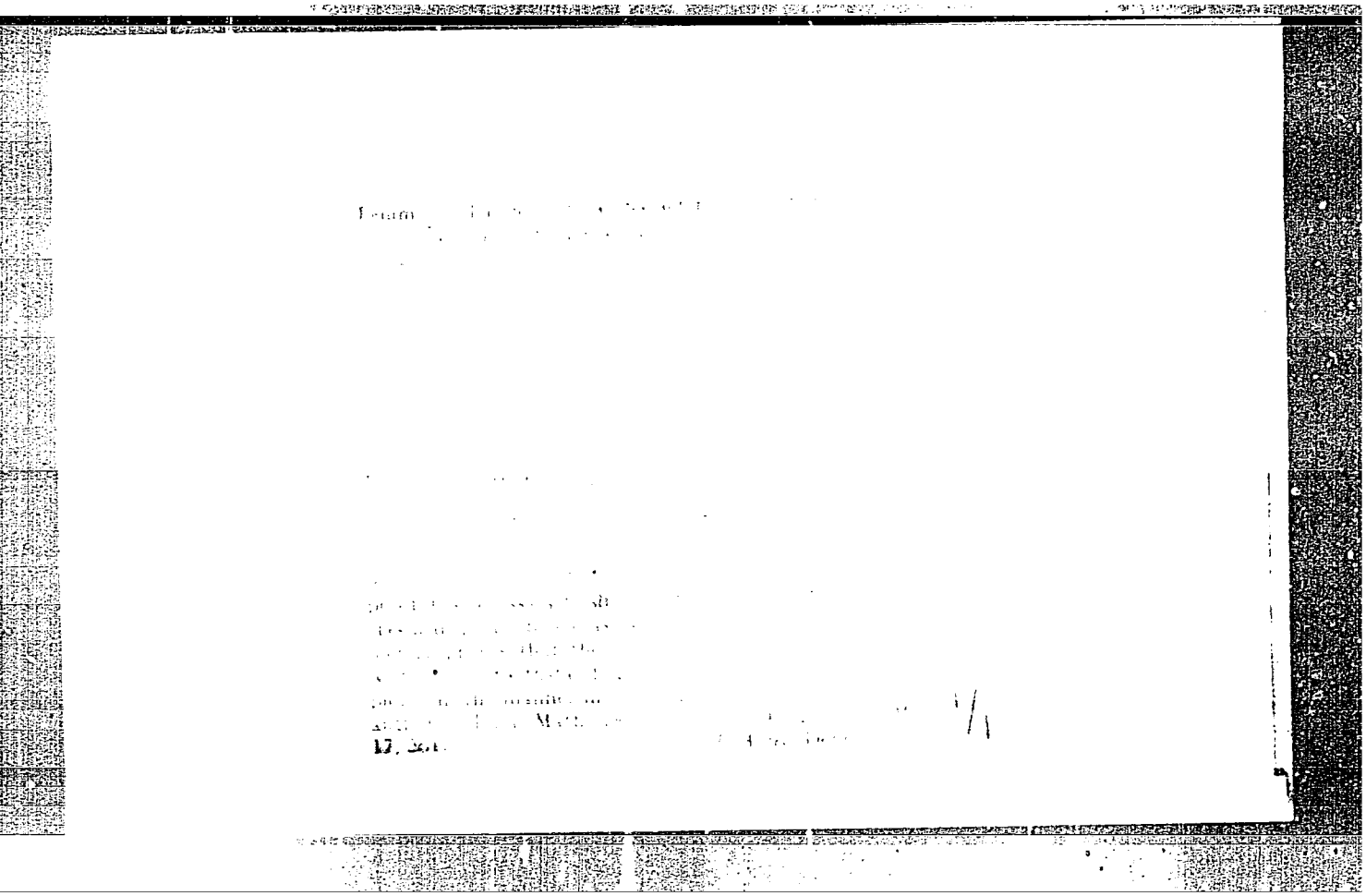


FELDMANN, L. (Budapest, V., Szerb u.23)

On linear difference equations with constant coeeficients. Periodica polytechn electr 3 no.3:247-257 '59. (EEAI 10:1)

1. Polytechnical University, Budapest.
(Difference equations)

FEL'DMARK, Ya.

Nomogram for use in computing piston rings. Mor. i rech.flot 14 no.4: 25-26 Ap '54. (MLRA 7:5)
(Piston rings)

FEL'DMUS, F.

Here we learn our trade. Mest.prom. i khud.promys. 4 no.4: 23 Ap '63. (MIRA 16:10)

1. Direktor Golitsynskogo uchebnogo kombinata, Moskovskoy obl.

FEL'DSHAU, A. F.

AUTHORS: Fel'dshau, A.F. and Starokadomskiy, K. G. 65-1-14/14

TITLE: On a Source of Error During the Evaluation of Coals for Power Stations According to their Ash Content. (Ob odnom istochnike oshibok pri otsenke energeticheskikh ugley po ikh zol'nosti).

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, No.1, p.72. (USSR).

ABSTRACT: The evaluation of coal on the basis of their ash content may lead to large errors when the mineral matter contains a considerable proportion of carbonates. Therefore, the best method of evaluation of coals for power generation is on the basis of their calorific value. The experiments were carried out by the Chemical Laboratory for Coal Investigations of the Lenin-Ugol' Trust of the Karagandaugol' Combine. A sample of coal was supplied by the No.120 Trust of Saranugol:- specific weight = 1.83, ash content = A^a = 38%, ash content of the dry mass A^s = 38.3%, CO_2^k = 23.6%, calorific value O_b^a = 3210 ccal/kg (total fuel content O_b^g = 5310 ccal/kg). It is concluded that the ash content decreased by 23.6% and a value of O_b^g = 8390 ccal/kg is obtained which is near to the average value.

Card 1/1

AVAILABLE: Library of Congress.

INDENBAUM, I.S.; PERSHIN, G.N., prof., nauchnyy rukovod.; SEMILETOVA, A., red.; FEL'DSHER, L., otv. za vypusk; SOYFERTIS, L., tekhn.red.

[Medicinal preparations; collection of annotations] Lekarstvennye preparaty; sbornik annotatsii. Pod nauchn.rukovodstvom G.N. Pershina. Sost. I.S.Indenbaum. Moskva, Kontora "Soiuzkhimfarmtorg," 1959. 332 p. (MIRA 13:3)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye mezhrespublikanskogo meditsinskogo snabzheniya i sbyta.
(DRUGS)

POLYAKOV, N.G., prof.; CHERIKOVSKAYA, T.Ya., kand. med. nauk; SIDORKOV, A.M., kand. farmatsevt. nauk; BELEN'KIY, Ye.Ye., kand. med. nauk; KUZ'MINA, K.K., provizor; VASIL'YEVA, S.F., provizor; POLYAKOV , N.G., prof., red.; FEL'DSHER, L.N., red.; KUCHERENKO, V.D., red.; CHULKOV, I.F., tekhn. red.

[Basic medicinal preparations and prepared drugs; a manual for physicians] Osnovnye lekarstvennye preparaty i gotovye formy; spravochnik dlia vrachei. Moskva, Medgiz, 1963. 359 p. (MIRA 17:2)

POCHKOV, N.G., prof.; CHERIKOVSKAYA, T.Ya., kand. med. nauk; SIDORKOV, A.M., kand. farmatsevt. nauk; KUCHERENKO, V.D., provizor; KUZ'MINA, K.K., provizor; VASIL'YEVA, S.F., provizor; FEL'DSHER, L.N., provizor; ZAKOSHANSKIY, N.Ya., red.

[Prepared drugs; a manual for physicians] Gotovye lekarstvennye preparaty; spravochnik dlia vrachei. Moskva, Meditsina, 1965. 228 p. (MIRA 18:6)

ISMAILOV, I.M., inzh.; GAVRILENKO, I.V., kand.tekhn.nauk; Prinimali uchastiye: KUTYAVIN, S.M.; ORESHKIN, D.K.; TADZHIBAYEV, G.T.; AKHUNDZHANOV, A.I.; TONKIKH, P.I.; PANCHENKO, A.I.; FEL'DSHER, M.G.; VORONINA, L.D.

Lowering the solvent content in seed meal before treatment in evaporators. Masl.-zhir.prom. 26 no.10:7-13 O '60. (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhirov (for Ismailov, Gavrilenko). 2. Uch-Kurganskiy masloekstraksionyy zavod (for Kutyavin, Oreshkin, Tadzhibayev). 3. Sredneaziatskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta zhirov (for Panchenko, Fel'dsher, Voronina).
(Uch-Kurgan--Oil industries--Equipment and supplies)

DRUZHININ, I.G.; VARFOLOMEYEVA, L.T.; FEL'DSHER, S.A.

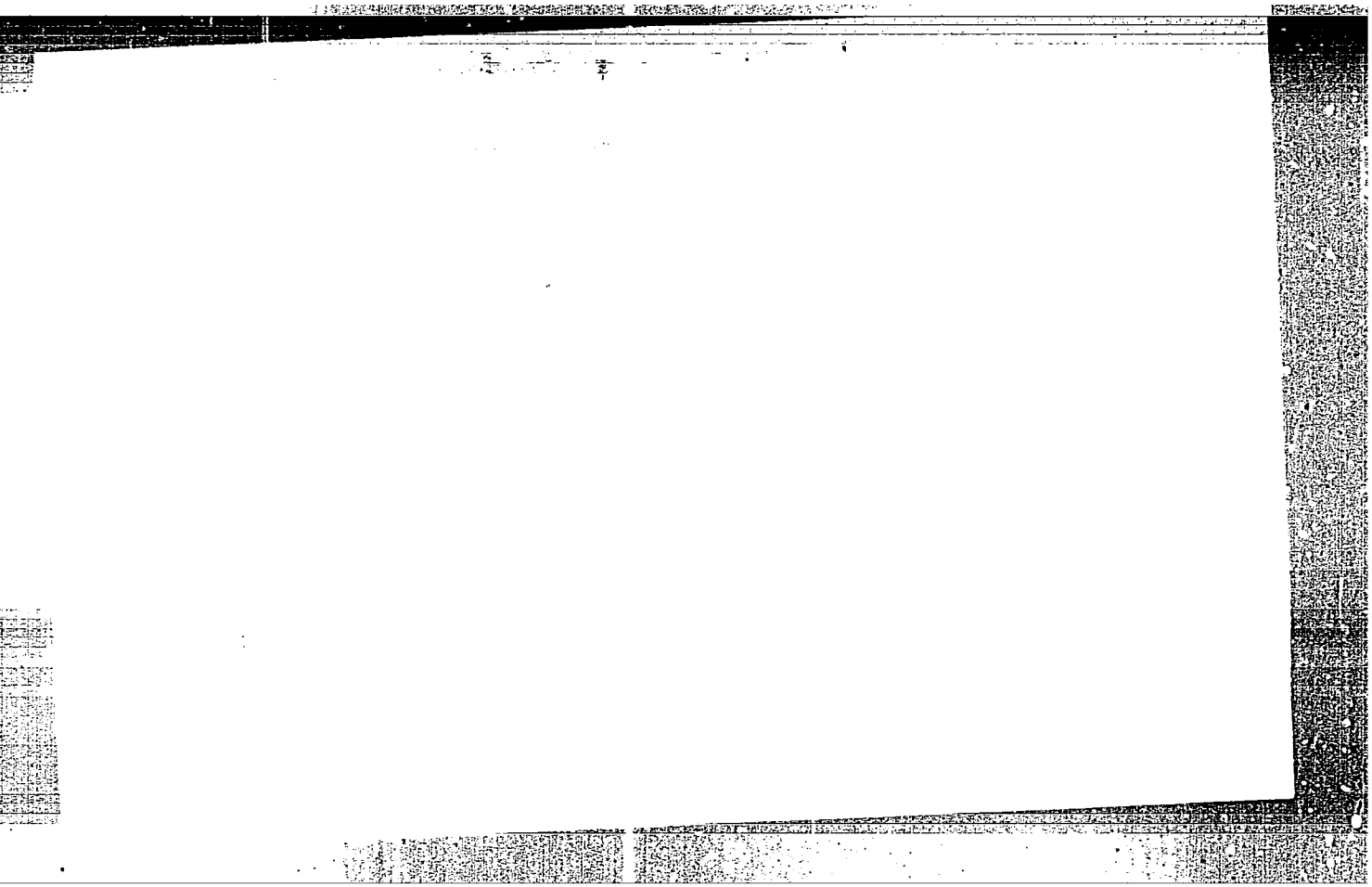
Comparative characteristics of the chemical composition of well waters on the "Vasil'evskii" State Farm. Uch. zap. Biol.-pochv. fak. Kir. un. no.7:155-162 '58. (MIRA 15:10)
(Kirghizistan—Water—Composition)

MANT'YEV, V.A.; FEL'DSHEROV, I.A.

Analytical and micro-preparation apparatus for continuous paper electrophoresis. Vop. med. khim. 7 no.5:542-545 S-O '61. (MIRA 14:10)

1. The Biochemical Laboratory of the P.A.Gertsen State Oncological Institute, Moscow.

(PAPER ELECTROPHORESIS--EQUIPMENT AND SUPPLIES)



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FEL'DSHON, V.

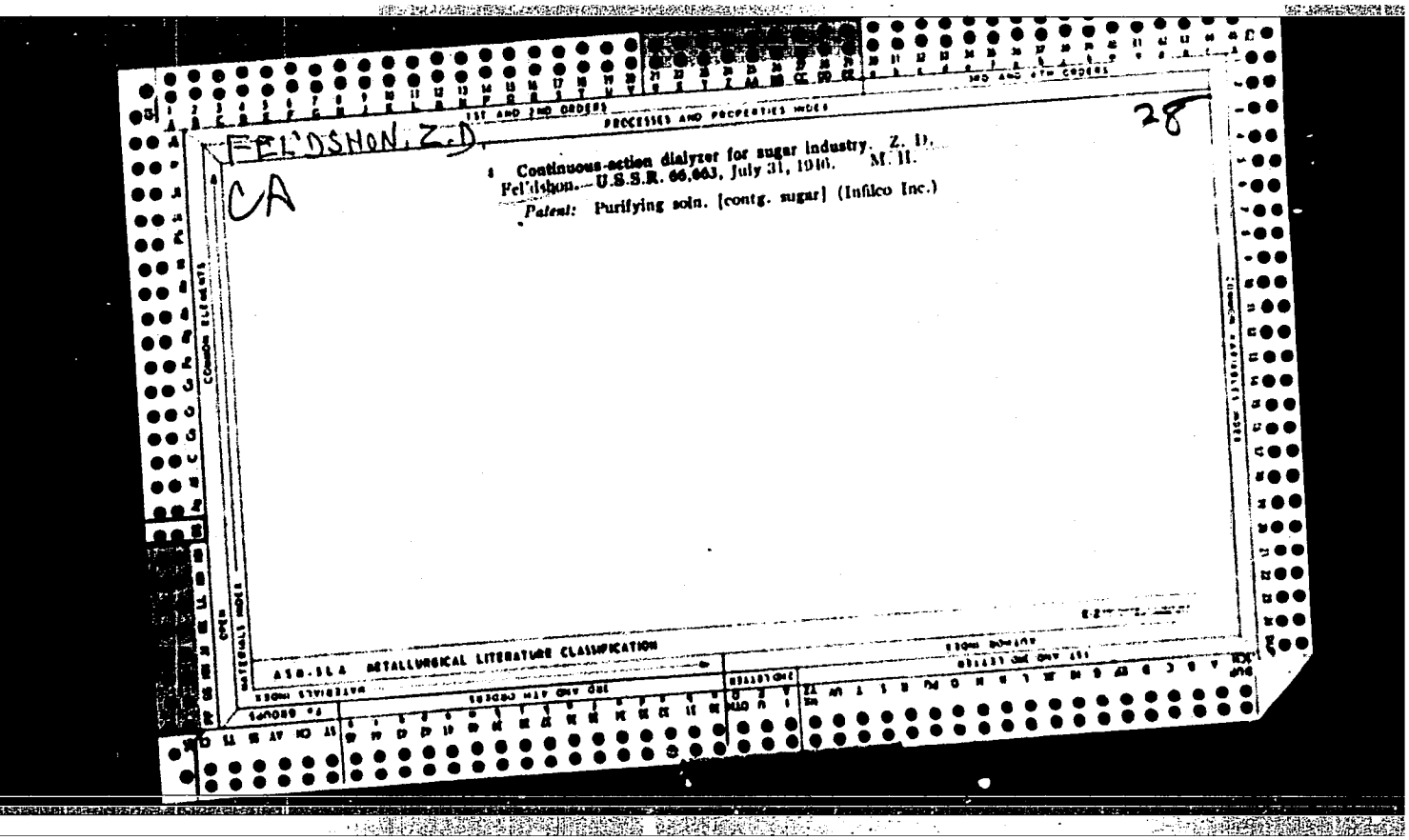
Our motto is mass participation! Voen. znan. 40 no.4:42 Ap '64. (MIRA 17:6)

1. Zamestitel' predsedatelya fabrichnogo komiteta Vsesoyuznogo dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR po sportivnoy rabote, Kiyev.

GRIGOR'YEV, V. [Hryhor"iev, V.]; FEL'DSHON, Z., kand.tekhn.nauk; GINDIS, Ya. [Hindis, IA.], inzh.; AKININ, P., inzh.

Automation of the production of slag "pumice" on a centrifugal machine. Bud.mat.i konstr. no.5:22-25 S-O '62. (MIRA 15:11)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury UkrSSR (for Grigor'yev).
(Automation control) (Slag)



FEL'DSHON, Z.D.

Increasing the productivity of beet slicers. Sakh. prom. 31 no.6:22-23 Je '57. (MLRA 10:6)
(Sugar industry--Equipment and supplies)

FEL'DSHON, Z.D.

Continuous diffuser. Sakh.prom. 34 no.2:25-28 F '60.
(MIRA 13:5)
(Sugar machinery) (Diffusers)

BRAND, V.E.; GRUTMAN, M.S. [Hrutman, M.S.]; FEL'DSHON, Z.D.; POLTORATSKAYA, Ye. [Poltoratska, E.], red.; IOAKIMIS, A., tekhn.red.

[Reed in rural construction] Komysh v sil's'komu budivnytstvi. Kyiv, Derzh.vyd-vo lit-ry z budivnytstva i arkhitektury URSR, 1959. 122 p. (MIRA 14:2)
(Reed (Botany)) (Farm buildings)

FEL'DSHTEYN, A.G.

On the treatment of hypertension. Sovet.med. no.4:30-31 Apr 51.
(CIML 20:8)

1. Candidate Medical Sciences Fel'dshteyn. 2. Odessa.

FEL'DSHTEYN, A. I.

"Immunobiological displacements in persons who contacted with scarlet fever."

Zhur. Mikrobiol., Epidemiol., i Immunobiol., No. 6, 1944.

FEL'DSHTEYN, A.I.; GARZANOVA, G.V.

Variability of Gärtner's bacillus; author's abstract. Zhur. mikrobiol.epid. i immun. 28 no.5:95-96 My '57. (MLRA 10:7)

1. Iz bakteriologicheskoy laboratorii Saratovskoy sanitarno-epidemiologicheskoy stantsii Stalinskogo rayona.
(SALMONELLA ENTERITIDIS)

FEL'DSHTEYN, A. L. USA 1/50T37

USSR/Engineering - Transmission Lines Jul/Aug 49
Radio - Transmission Lines

"Energy Relations in a High-Frequency Transmission Line," A. L. Fel'dshteyn, Engr, 5 pp

"Radiotekh" Vol IV, No 4

Discusses energy relations in a long line with losses for a fixed set of conditions at the terminus and starting point. Examines the conditions for optimal energy relations in treating the generator-line load system as a closed space. Introduces the concept of "operating quality" of such a system and the areas of application of this concept. Submitted 17 Mar 49.

1/50T37

FEL'DSHTEYN, A. L.

"Matching of Transmission Lines", Radio, No 3, p 52, 1950.

FEL'DSHTEYN, A. L.

Radiophysics, Application of Radiophysics Methods
Radiotekhnika, Vol 6, No 5, 1951. "Nonuniform (Communications) Lines."

No abstract.

SO: Radiotekhnika, Vol 9, No 2, Mar/Apr 54; (W-30785, 28 July 1954)

[illegible], A. L.

Radiophysics, Application of Radiophysics Methods
Radiotekhnika, Vol 7, No 6, 1952. "Synthesis of Nonuniform (Communications) Lines."

No abstract.

SO: Radiotekhnika, Vol 9, No 2, Mar/Apr 54; (W-30785, 28 July 1954)

FEL'DSHTEYN, A. L.

5141. Non-uniform lines as filters. A. L. [illegible] 621.372.54 : 621.3

Nachrichtentechnik, 4, 264-6 (June, 1954) *In German.*

An extension of the author's theory of symmetrical non-uniform lines [n.u.l.'s] [*Radiotekhnika*, 6, 1951]. A n.u.l. is inserted between two ordinary lines. In the lossless case, the filter action is described by the reflection coefficient of the n.u.l. An approximate expression for the reflection coefficient in the general case is given as an integral of a function of the wave resistance of the n.u.l. An advantage is that a filter with a given response can be synthesized by a Fourier transform method, characteristic points on the frequency axis of the response being related to the location of reflecting points along the length of the n.u.l. Good agreement is obtained between calculation and experiment for a simple filter consisting of a n.u.l. with cosinusoidal length distribution of reflection.

S. C. DUNN

AUTHORS: Fel'dshteyn, A. L., Member of the Society SOV/108-13-8-3/12

TITLE: Some Problems in the Synthesis of Heterogeneous Lines (Nekotoryye zadachi sinteza neodnorodnykh liniy)

PERIODICAL: Radiotekhnika, 1958, Vol. 13, Nr 8, pp. 13 - 23 (USSR)

ABSTRACT: The author describes the method of the synthesis by means of the Laplace integral and gives examples for the construction of heterogeneous lines according to given frequency characteristics. The approximation formula (10) of (Ref 1) serves as a basis for the calculation. This reference shows the connection between the line structure and the reflection factor at the line terminal: formula (1). The function given by formula (4) - which characterizes the relative change of the characteristic impedance is introduced and formula (1) is written down in the form of the transform according to Laplace-Karson (?)(Karson) as formula (5). The function F(p) occurring in it denotes the reflection factor and therefore can already previously be subjected to the limitations restricting the circuit functions that can be physically realized (Ref 2). These limitations are for the reflection factor the following: 1) $|F(p)| \leqslant 1$ on the axis of real

Card 1/2

Corres. Mbr. VNORiE

frequencies. 2) F(p), besides the poles in the left semi-plane of the complex variable p does not have any other special points. The meromorphous function F(p) is then written down in form of a quotient of two integral functions and the final form for the equation (1) is obtained: formula (6). This integral equation has a general solution in form of the so-called expansion formula by Heaviside (Khevisayd): formulae (7) or (8). Examples are given. They show the use of the formulae (7) or (8). The examples can be divided into two groups: 1) The demanded frequency characteristic is given. 2) The equivalent circuit diagram LCR is given which is to be investigated. There are 14 figures and 4 references, 3 of which are Soviet.

SUBMITTED: August 8, 1957

1. Frequency 2. Mathematics 3. Electric circuits

SOV/109- - -4-3-25/38

AUTHORS: Fel'dshteyn, A.L., Yavich, L.R.

TITLE: A Comparison of Step-like and Continuous Line Sections (K sravneniyu stupenchatykh i plavnykh perekhodov)

PERIODICAL: Radiotekhnika i Elektronika, Vol 4, Nr 3, 1959, pp 527-529 (USSR)

ABSTRACT: First, a Chebyshev-type step-like section (see Fig 1) is considered. This device was investigated by a number of authors (Refs 2,5,6 and 8). It is assumed that the length of this type of line section, which consists of n small steps is given by:

$$l_0 = \frac{1}{2\pi} \Lambda_2 \, n \arccos\left\{\frac{1}{\cos \frac{K}{n}}\right\} \qquad (1)$$

where Λ_2 is the wavelength in the transmission line corresponding to the "long-wave" boundary of the transmission range; K is expressed by Eq (2), where R is the ratio between the characteristic impedances of the matched lines; h is the maximum deviation of the Chebyshev polynomial from its zero value. When n in Eq (1) tends to infinity, the line section represents a continuous transition, and Eq (1) is in the form of

Card 1/2

A Comparison of Step-like and Continuous Line Sections

Eq (3). The problem consists of comparing values of l_0, as given by Eqs (1) and (3), for the same value of R and the same value of the reflection coefficient. The results are shown in Fig 4 for various values of n and Γ; the limiting case of a continuous transition is represented by the dashed curves. There are 5 figures and 8 references, 6 of which are Soviet and 2 English. One of the Soviet references is translated from English.

Card 2/2

SUBMITTED: September 18, 1958

Я. Я. [illegible]

Метод развязки [illegible] связей без изменения конфигурации и числа элементов связи.

В. Ф. [illegible]

Широкополосные [illegible] с переменными параметрами.

А. А. [illegible]

Расчет [illegible] системы пластинчатого электромеханического фильтра.

Р. Г. Воронцов

Расчет магнитного сопротивления пластинчатого магнитопровода.

12 июня
(с 10 до 16 часов)

С. Н. [illegible],
Н. С. Степанов

Распространение волн в системах с бегущими параметрами

А. Л. [illegible],
Л. Р. [illegible]

Опыт и перспективы [illegible] некоторых элементов СВЧ тракта.

В. В. Григорьян-Рябов

Общая теория захвата [illegible] генераторов

А. Г. Константиновский

Вопрос повышения стабильности режимов [illegible] частоты автоколебательных [illegible] генераторов

12 июня
(с 18 до 22 часов)

А. В. [illegible]

Практическая система электромагнитных [illegible], [illegible] с [illegible].

Я. Т. Ким

Воздействие суммы синусоидальных колебаний на нелинейное сопротивление.

В. А. [illegible]

К аппроксимации характеристик нелинейных элементов радиотехнических устройств.

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORiE), Moscow, 8-12 June. 1959

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S/109/60/005/05/006/021
E140/E435

AUTHORS: Fel'dshteyn, A.L. and Yavich, L.R.

TITLE: The Calculation of Stepped Junctions with Maximally-Flat Characteristics

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 5, pp 762-770 (USSR)

ABSTRACT: A method is given for calculating two- and three-step waveguide junctions with maximally-flat characteristics. Tables are given for wave-impedance changes between 1.2 and 9.2. Acknowledgements are expressed to R.Sh.Sharikova for her assistance with the calculation work. There are 9 figures, 2 tables and 3 Soviet references.

SUBMITTED: April 13, 1959

Card 1/1

4

9.1400

77175
SOV/108-15-1-1/13

AUTHOR: Fel'dshteyn, A. L., Yavich, L. R.

TITLE: Engineering Computation of Chebyshev's Stepped Transitions

PERIODICAL: Radiotekhnika, 1960, Vol 15, Nr 1, pp 3-15 (USSR)

ABSTRACT: The paper is an exposition of the method of engineering computation of stepped transitions between transmission lines. The results of calculation of 405 typical problems are given in table form. The following two basic definitions are given: (1) A stepped transition is a quadrupole consisting of n sections of the transmission line ("steps") which have the same length ℓ and various wave impedances ρ_i (see Fig. 1).

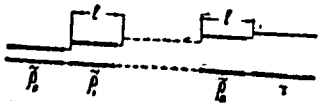

Fig. 1.

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Engineering Computation of Chebyshev's Stepped Transitions

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SOV/108-15-1-1/13

The purpose of a stepped transition is to match two lines with the wave impedances ρ_0 and r, respectively. (2) A stepped transition is called optimal, or Chebyshev, when (a) for a selected wave impedance jump $R = r\rho_0$, (b) a selected permissible mismatching value is $|\Gamma|_{max}$, and (c) for a selected passband $\lambda_2 - \lambda_1$, the transition has a minimum overall length $\ell_0 = n\ell$. The attenuation of a Chebyshev transition equals 10 $\log_{10}$ of the magnitude $|T_{11}|^2$, which is:

$$|T_{11}|^2 = 1 + h^2 T_n^2\left(\frac{\cos\theta}{p}\right) = 1 + h^2 T_n^2(x), \tag{1}$$

where $T_{11}(x)$ is the Chebyshev polynomial of the first type and n-th order, n = 1, 2, 3... being the

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number of transition steps; h is a parameter defining the permissible mismatch $|\Gamma|_{max}$; p is a parameter defining the width of the passband; $\Theta = 2\pi\ell/\Lambda$ is electrical length of the step and Λ is the wavelength in the transmission line. The stepped transitions are usually characterized by 5 parameters: n, h, p, R and ℓ_o, of which 3 may be selected independently of each other whereas the two others follow from computation. The relationship between these parameters is derived from Eq. (1) by considering $\cos\Theta = 1$, i.e., for zero length of the steps, and taking values of the argument $x = \cos\Theta/p$ at the boundaries of the passband. The following expressions have been obtained:

$$p = \frac{1}{\cos\left(\frac{1}{n}\operatorname{arc\,cos} C\right)}. \qquad (12)$$

$$\Lambda_1 = \frac{2\pi l}{\pi - \arccos p}, \qquad (15)$$

$$\Lambda_2 = \frac{2\pi l}{\arccos p}. \qquad (16)$$

where Λ_1 and Λ_2 are the wavelengths in the transmission line, generally different from λ_1 and λ_2 in the outside space. The length $l_o = n l$ is given as:

$$\frac{l_0}{\Lambda_2} = \frac{1}{2\pi} n \arccos\left\{\frac{1}{\cos\frac{1}{n}\arccos C}\right\}, \qquad (18)$$

C in Eq. (18) and (12) is defined as:

Engineering Computation of Chebyshev's Stepped Transitions

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$$C = \frac{R-1}{2n\sqrt{R}} .$$

Expressions are given for the wave impedances ρ_1 of the steps of transitions with n = 2, n = 3, and n = 4. Values of R, p, and ρ_1 are given in tables for n = 2, n = 3, and n = 4, and for various magnitudes of $|\Gamma|_{max}$. The tables give the solution of 405 typical synthesis problems of stepped transitions. Two numerical examples illustrate the use of the tables for rapid computation of similar problems. In an appendix to the paper, expressions for ρ_1 and ρ_2 in a two-step transition are derived by comparing the coefficients of cos Θ in Eq. (1) and in an attenuation equation obtained as a product of matrices of stepped transition elements. R. Sh. Shakirova helped make the calculations.

Card 5/5

85722

S/108/60/015/006/007/012/XX
B010/B070

9.1400 (2703, 3803, 1006)

AUTHOR: Fel'dshteyn, A. L., Member of the Society

TITLE: Generalized Matrix Theory of Inhomogeneous Lines

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 6, pp. 10-17

TEXT: Systems of equations are given for the calculation of the elements of the transmission matrix of an inhomogeneous line. These equations appear promising for the unification of the methods of solving problems in line theory. It is assumed that the inhomogeneous line may be approximated by connecting numerous discreet passive four-poles in series. The transmission matrix (T) is, then, obtained as the product of the transmission matrices $(T)_t$ of the individual discreet four-poles. The following recurrence formulas hold for the elements (A_k, B_k, C_k, D_k) of the total matrix:

$$A_k = \prod_{i=1}^{k} a_i + \sum_{m=1}^{k} b_m C_{m-1} \prod_{i=m+1}^{k} a_i,$$

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Generalized Matrix Theory of Inhomogeneous Lines

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$$C_k = \sum_{m=1}^{k} c_m A_{m-1} \prod_{i=m+1}^{k} d_i, \quad B_k = \sum_{m=1}^{k} b_m D_{m-1} \prod_{i=m+1}^{k} a_i, \quad D_k = \prod_{i=1}^{k} d_i + \sum_{m=1}^{k} c_m B_{m-1} \prod_{i=m+1}^{k} d_i,$$

where a, b, c, and d are the matrix elements of the discreet four-poles, and k is their number. It is known that the wave transmission matrix a_i, b_i, c_i, d_i of a section of line with wave impedance ϱ_i and length Δx adjoining another section with the wave impedance ϱ_{i+1} is given in the usual notation by the following relation: $a_i = \frac{1}{2}(\alpha_i + 1/\alpha_i)e^{\gamma i \Delta x}$, $b_i = \frac{1}{2}(\alpha_i - 1/\alpha_i)e^{-\gamma i \Delta x}$, and similar expressions for c_i and d_i, α_i being $\sqrt{(\varrho_i+1)/\varrho_i}$. A_k, B_k, C_k, and D_k for discontinuous inhomogeneous lines may be calculated from the same expressions. For continuous inhomogeneous lines, that is, when the number of discreet four-poles becomes infinitely great, the sums and products go over into integrals:

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Generalized Matrix Theory of Inhomogeneous Lines

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$$A(l) = \exp\left(\int_0^l \gamma(x)dx\right) + \int_0^l N(x)C(x)\exp\left(\int_x^l \gamma(x)dx\right)dx,$$

$$C(l) = \int_0^l N(x)A(x)\exp\left(-\int_x^l \gamma(x)dx\right)dx,\ D(l) = \exp\left(-\int_0^l \gamma(x)dx\right) + \int_0^l N(x)B(x)$$

$$\exp\left(-\int_x^l \gamma(x)dx\right)dx,\ B(l) = \int_0^l N(x)D(x)\exp\left(\int_x^l \gamma(x)dx\right)dx,\ \text{where } N(x) = \frac{1d}{2dx}\ln\varrho(x),$$

l is the length of the line; and A, B, C, D are elements of the transmission matrix. It is shown that these equations can be transformed, by the separation of variables, into four Volterra integral equations of the second degree which are known to yield well-converging series for the solution; also the error is easily estimated. The first approximation gives:

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Generalized Matrix Theory of Inhomogeneous Lines

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$A_1 = \exp\left(\int_0^1 \gamma(x)dx\right)$, $B_1 = \exp\left(-\int_0^1 \gamma(x)dx\right) \int_0^1 N(x)\exp\left(2\int_x^1 \gamma(x)dx\right)dx$, and corresponding expressions for C_1 and D_1; the magnitudes of the errors involved are given by $\Delta A \leq (\mathrm{ch}\ Ml)-1$, $\Delta B \leq (\mathrm{sh}\ Ml) - Ml$, and corresponding expressions for ΔC and ΔD, where $M = \mathrm{Max}|N(x)|$ $(0 \leq x \leq 1)$. In some special cases, not dealt with in the paper, exact solutions may be obtained by solving the differential equations resulting from differentiating the integral equations with respect to the upper limit:

$A'' - (N'/N)A' - \left\{(\gamma^2 + N^2) + (\gamma' - \gamma N'/N)\right\}A = 0$, $C'' - (N'/N)C' - \left\{(\gamma^2 + N^2) - (\gamma' - \gamma N'/N)\right\}C = 0$, $B'' - (N'/N)B' - \left\{(\gamma^2 + N^2) + (\gamma' - \gamma N'/N)\right\}B = 0$, $D'' - (N'/N)D' - \left\{(\gamma^2 + N^2) - (\gamma' - \gamma N'/N)\right\}D = 0$, where A, B, C, D are the transmission matrix elements, and the primed quantities are differential coefficients with respect to l. In conclusion, it is indicated that the

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B010/B070

difficult calculation of the input reflection coefficient may be simplified with the help of Riccati's differential equation combined with the solutions of the four integral or differential equations. There are 4 figures and 12 Soviet references.

SUBMITTED: December 17, 1958

X

Card 5/5

FEL'DSHTEYN, A.L.

Use of network theory methods in the synthesis of systems with distributed constants. Radiotekhnika 15 no.11:11-22 N '60.
(MIRA 13:11)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni A.S.Popova.
(Electric networks)

20577
S/109/61/006/002/009/023
E140/E435

9,1900 (1160 2603)

AUTHOR: Fel'dshteyn, A.L.

TITLE: The Synthesis of Step Directional Couplers

PERIODICAL: Radiotekhnika i elektronika, 1961, Vol.6, No.2, pp.234-240

TEXT: The author starts from the well-known directional coupling properties of coupled homogeneous transmission lines. Relationships are developed for two special cases: 1) directional couplers with minimum number of sections (Chebyshev or isoextremal characteristics); 2) coupler with maximally-smooth characteristics. The author also considers the question of the physically attainable properties of directional systems. The analysis proceeds from the single-step directional coupler (homogeneous symmetrical coupled lines), multi-step directional coupler (cascade connection of arbitrary number of homogeneous coupled lines) and the limiting case of the multi-step system (inhomogeneous coupled lines). It is found that the last case presents an infinite passband dropping to zero only at zero frequency. The division of power between the branches has a polynomial character, permitting the design of directional couplers with similar

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The Synthesis of Step ... S/109/61/006/002/009/023
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properties to those of step tapers and step filters. Certain mathematical demonstrations are included in an appendix. There are 6 figures, 1 table and 9 references: 8 Soviet and 1 English.

SUBMITTED: June 9, 1960

Card 2/2

FEL'DSHTEYN, A.L.

Step bridges. Radiotekh. i elektron. 6 no.9:1581-1582 S '61.
(MIRA 14:8)
(Radio lines)

22728

S/108/61/016/005/002/005
B104/B205

9,1400

AUTHOR: Fel'dshteyn, A. L., Member of the Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. S. Popov

TITLE: Non-uniform coupled lines

PERIODICAL: Radiotekhnika, v. 16, no. 5, 1961, 7. - 14

TEXT: It is first noted that there are no data available in the literature on the theory of non-uniform coupled lines, which offers new possibilities for the synthesis of optimum superhigh-frequency eight-terminal networks. In presenting this theory, the author proceeds from a network consisting of s cascade-connected eight-terminal networks which he considers to be composed of two eight-terminal networks, i.e., the s-th eight-terminal network and the system of the preceding (s-1) eight-terminal networks. Therefore, the transmission matrix of the entire system may be represented as the product of the transmission matrix of the s-th eight-terminal network and that of the system of (s-1) eight-terminal networks. Based on these assumptions, the author obtains four systems of equations describing the network of s eight-terminal networks with

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Non-uniform coupled lines

discretely varying parameters. Next, a network is studied, in which each eight-terminal network is considered to be a pair of symmetric homogeneous lines (Fig. 2). The cascade connection of these lines is regarded as a coupled line of several stages (Fig. 3). Current and voltage in homogeneous, coupled lines are known to be given by the system

$$\left.\begin{aligned} U_1 &= U_3\cos ml + j(\rho I_3 + rI_4)\sin ml \\ U_2 &= U_4\cos ml + j(rI_3 + \rho I_4)\sin ml \\ I_1 &= I_3\cos ml + j\left(\frac{U_3}{w} - \frac{U_4}{v}\right)\sin ml \\ I_2 &= I_4\cos ml + j\left(\frac{U_4}{w} - \frac{U_3}{v}\right)\sin ml \end{aligned}\right\}, \qquad (13)$$

where ρ and w stand for the characteristic impedance, and r and v for the coupling impedance. The coefficients of Eqs. (13) form the matrix

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$$[a]=\begin{bmatrix} \cos\theta & 0 & i\rho\sin\theta & ir\sin\theta \\ 0 & \cos\theta & ir\sin\theta & i\rho\sin\theta \\ \frac{i\sin\theta}{w} & -\frac{i\sin\theta}{v} & \cos\theta & 0 \\ -\frac{i\sin\theta}{v} & \frac{i\sin\theta}{w} & 0 & \cos\theta \end{bmatrix}. \quad (15)$$

of the stages. From this matrix one obtains the wave-transmission matrix

$$[T]=\begin{bmatrix} A & 0 & 0 & -M \\ 0 & A & -M & 0 \\ 0 & M & A^* & 0 \\ M & 0 & 0 & A^* \end{bmatrix}=$$

$$=\begin{bmatrix} \cos\theta+i\rho\sin\theta & 0 & 0 & -ir\sin\theta \\ 0 & \cos\theta+i\rho\sin & -ir\sin\theta & 0 \\ 0 & ir\sin\theta & \cos\theta-i\rho\sin\theta & 0 \\ ir\sin\theta & 0 & 0 & \cos\theta+i\rho\sin\theta \end{bmatrix}, \quad (18)$$

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Non-uniform coupled lines

of the stages on the assumption that all lines in the eight-terminal network have the same characteristic impedance ($\rho_1 = \rho_2 = \rho_3 = \rho_4 = R$) and the condition $rv = R^2$ is satisfied. Here, $r \sim r/R$ and $\rho \sim \rho/R$ are normalized. This system is fully determined by the two elements A and M, for which the following relations are derived by passing to a limit. In this procedure, the entire system is conserved and the number of stages is infinitely increased:

$$A(1) = \exp\left(im\int_1^1 \rho(x)dx\right) - im\int_0^1 r(x)M(x)\exp\left(im\int_x^1 \rho(x)dx\right)dx \qquad (22)$$

$$M(1) = im\int_0^1 r(x)A(x)\exp\left(-im\int_x^1 \rho(x)dx\right)dx \qquad (23)$$

Thus, non-uniform coupled lines with balanced current and voltage coupling are fully determined by two integral equations similar to those obtained for non-uniform single lines. The successive approximation of Eqs. (22) and (23) and design problems are discussed finally. It is shown that of the four parameters (ρ, w, r, v) of coupled double conductors, only two parameters, e.g., ρ and r, are independent. An additional coupling,

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$rv = R^2 = 1$, exists in the case under consideration (Fig. 4). Hence, only one of the four parameters is independent, e. g., r(x) which is then given by the relation $r(x) = 60\ln\left\{1 + \left(\frac{D}{a_{12}}\right)^2\right\}$. It is shown that, if the coupling impedance in this form can be changed by a change of D, the relation $\varrho(x) = \sqrt{1+r^2(x)} = 120\ln\frac{D}{a}$ will be obtained only by varying the diameter a of the conductor. If r(x) is obtained by varying a_{12}, then the corresponding change of $\varrho(x)$ will be brought about through a variation of D or a. Similar results are obtained for lines with coaxial or plane coupling. There are 4 figures and 6 Soviet-bloc references.

SUBMITTED: October 10, 1960

FEL'DSHTEYN, A.L.

Methods for solving summative equations. Radiotekhnika 16 no.6:38-39 Je '61. (MIRA 14:6)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi.

(Integral equations)
(Matrices)
(Electric networks)

33778
S/108/62/017/001/005/007
D271/D304

9,1300

AUTHORS: Fel'dshteyn, A.L., and Zhavoronkova, Ye.S., Members of the Society (see Association)

TITLE: Calculating the Chebyshev directional couplers, with loose coupling

PERIODICAL: Radiotekhnika, v. 17, no. 1, 1962, 40 - 50

TEXT: A synthesis method is presented for multi-element optimal directional couplers, and design data are tabulated for couplers consisting of 2 - 11 elements. The coupler which is considered is shown in Fig. 2; its function is to branch a required power from the main line 1-3 into 4, while the leak into 2 remains below the permitted limit. Transfer coefficients S_{12} and S_{14} are functions of frequency; if they are of Chebyshev (iso-thermal) character, a minimum number of elements is required. Elements of the coupler are four-port networks as shown in Fig. 3, where α is the number of the element. Scatter matrices of the coupler and of its elements are of the type

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$$[S] = \left[\begin{array}{cc:cc} S_{11}S_{12} & S_{12}S_{14} & & \\ S_{12}S_{11} & S_{14}S_{12} & & \\ \hdashline & & S_{12}S_{14} & S_{11}S_{12} \\ & & S_{14}S_{12} & S_{12}S_{11} \end{array}\right] \text{ and } [S]_\alpha = \left[\begin{array}{cc:cc} S_{11}^* & S_{12}^* & S_{13}^* & S_{14}^* \\ S_{12}^* & S_{11}^* & S_{14}^* & S_{13}^* \\ \hdashline S_{13}^* & S_{14}^* & S_{11}^* & S_{12}^* \\ S_{14}^* & S_{13}^* & S_{12}^* & S_{11}^* \end{array}\right]; \quad (1)$$

Wave transfer matrix $[T]_\alpha$, assuming S_{11}, S_{13}, $S_{14} \ll 1$ and $S_{12} \cong 1$, is

$$[T]_\alpha = \left[\begin{array}{cc:cc} e^{i\theta} & -S_{14}^* e^{i\theta} & -S_{11}^* & -S_{12}^* \\ -S_{14}^* e^{i\theta} & e^{i\theta} & -S_{12}^* & -S_{11}^* \\ \hdashline S_{11}^* & S_{12}^* & e^{-i\theta} & S_{14}^* e^{-i\theta} \\ S_{12}^* & S_{11}^* & S_{14}^* e^{-i\theta} & e^{-i\theta} \end{array}\right], \quad (8)$$

where $\theta = \frac{2\pi l}{\Delta}$. Transfer coefficients are then written out as

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$$S_{11} = e^{-i\theta} \sum_{\alpha=1}^{n} S_{11}^{\alpha} \, e^{-i2(n-\alpha)\theta}, \quad (9)$$

$$S_{12} = e^{-i\theta} \sum_{\alpha=1}^{n} S_{12}^{\alpha} \, e^{-i2(n-\alpha)\theta}, \quad (10)$$

$$S_{13} = \prod_{q=1}^{n} S_{13}^{\alpha} e^{-i\theta} \approx e^{-in\theta}, \quad (11)$$

$$S_{14} = e^{-in\theta} \sum_{\alpha=1}^{n} S_{14}^{\alpha}, \quad (12)$$

where each parameter of the coupler depends only on element parameters of the same designation. A particular case is considered when an element of the coupler is non-directional; because of symmetry

$$-S_{11}^{\alpha} = S_{12}^{\alpha} = S_{14}^{\alpha} = iC_{\alpha} \quad (13)$$

where 10 log $\frac{1}{C_{\alpha}^2}$ is transfer attenuation of one element. Transfer coefficients S_{12} and S_{14} become

$$S_{12} = \sum_{\alpha=1}^{n} C_\alpha \, e^{-i2(n-\alpha)\theta} \qquad (14)$$

$$S_{14} = \sum_{\alpha=1}^{n} C_\alpha. \qquad (15)$$

The entire system is then fully determined by values of C_α, S_{12} is a Fourier series which may be transformed into Chebyshev polynomials the maximum value of S_{12} is equal to S_{14}; S_{14} is independent of frequency if C_α does not depend on frequency. This last property permits one to optimize the entire system by bringing only S_{12} into the form of Chebyshev polynomial. Expressions are obtained from (14) for various values of n, e.g. for n = 4:

$$S_{12} = (2C_1\cos 3\theta + 2C_2\cos\theta)e^{-i3\theta}, \quad (C_1 = C_4;\ C_2 = C_3). \qquad (19)$$

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It is postulated that backward transfer coefficient determined by expressions as above must have Chebyshev frequency characteristics:

$$|S_{12}|_n = hT_{n-1}\left(\frac{\cos\theta}{p}\right), \qquad (21)$$

where h and p are amplitude and scale coefficients, $T_{n-1}(\Omega)$ - Chebyshev polynomial of first class and (n-1)order; h represents permitted value of S_{12} in the coupler pass-band. The obtainable value of p is

$$p = \frac{1}{\mathrm{ch}\left[\frac{1}{n-1}\,\mathrm{ar\ ch}\,\sqrt{k}\right]}, \qquad (24)$$

where k is the minimum prescribed directivity; $k = |S_{14}|^2/h^2$. When p is known, the required number of elements can be found from

$$n = \frac{\mathrm{ar\ ch}\,\sqrt{k}}{\mathrm{ar\ ch}\,\frac{1}{p}} + 1. \qquad (25)$$

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In design work it is not p which is of interest but the working range $\Delta = 2\frac{\lambda_2 - \lambda_1}{\lambda_2 + \lambda_1}$ and overlap coefficient $\chi = \lambda_2/\lambda_1$, which are obtained from p. In order to determine transfer coefficients of elements C_1, C_2, etc., Chebyshev polynomials are transformed into a form similar to that of the expression (19), e.g.

$$T_4\left(\frac{\cos\theta}{p}\right) = \frac{1}{p^4}\cos 4\theta + 4\left(\frac{1}{p^4} - \frac{1}{p^2}\right)\cos 2\theta + \left(\frac{3}{p^4} - \frac{4}{p^2} + 1\right). \quad (32)$$

By comparing expressions of the type (19) and (32) values of C_n/h are obtained as a function of p. These are tabulated (in dB) in design tables. Diameters of coupling holes are determined for the case of a coupler formed by two identical waveguides coupled by circular holes in the common short wall. For loose coupling, the expression relating transfer attenuation to dimensions of the hole is

$$L_{dB} = 20 \log \frac{1}{C_1} = 20 \log \frac{12\, b}{\pi \lambda} \left(\frac{a}{d}\right)^3. \quad (34)$$

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33778

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Calculating the Chebyshev directional... D271/D304

A numerical example is given illustrating the application of the method. Design data are presented in 10 tables giving values for n = 2, 3, .. 11 and p = 0.1, 0.2, ..., 1.0. There are 6 figures, 10 tables and 10 references: 5 Soviet-bloc and 5 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: W.R. Hewlett, U.S.A. patent specification 2,871,452 of January 27, 1959; E. Hensperger, The microwave journal, issue 2, no. 8, 1959; B. Levy, Proc. I.E.E., part C, no. 337E, 1959; J. Reed and G.J. Wheeler, I.R.E. transactions on microwave theory and techniques. MTT-4, no. 4, 1956.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A.S. Popov) [Abstractor's note: Name of association taken from first page of journal]

SUBMITTED: October 26, 1960

Card 7/8

FEL'DSHTEYN, Aleksandr L'vovich; YAVICH, Lev Rafaelovich; SMIRNOV, Vitaliy Petrovich; PERETS, R.I., red.; BUL'DYAYEV, N.A., tekhn. red.

[Manual on the elements of waveguide technology] Spravochnik po elementam volnovodnoi tekhniki. Moskva, Gosenergoizdat, 1963. 359 p. (MIRA 17:2)

FEL'DSHTEYN, A.L.; SMIRNOV, V.P.

Characteristic impedance of a rectangular wave guide. Radiotekhnika 18 no.4:78 Ap '63. (MIRA 16:5)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Wave guides)

L 10407-63 BDS
ACCESSION NR: AP3001124 S/0108/63/018/006/0015/0025 45

AUTHOR: Mazepova, O. I.; Fel'dshteyn, A. L.; Yavich, L. R. Members of the Society (see Association)

TITLE: Engineering calculation of SHF band-pass filters

SOURCE: Radiotekhnika, v. 18, no. 6, 1963, 15-25

TOPIC TAGS: SHF band-pass filter

ABSTRACT: The method of SHF filter calculation is based on an equivalent replacing of the lumped-parameter systems (low-pass filters and ladder-type band-pass filters) with the filters formed by inhomogeneities in waveguides. The article offers: (1) a systematic procedure for calculating SHF filters with quarter-wave couplings; (2) tabulated typical calculations. Functions of effective attentuation for both the Tchebycheff and the maximum-flat-frequency response filters are evaluated. Cavity resonators are represented by waveguide stubs terminated with three inductive posts on each end. The design tables were compiled by means of an electronic computer. "Programing was performed by Engineer A. V. Ivakina." Orig. art. has: 9 formulas, 11 figures, and 7 tables.

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L 10107-63
ACCESSION NR: AP3001124

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im A. S. Popova (Scientific and Technical Society of Radio Engineering and Electrocommunications)

SUBMITTED: 07 Aug62 DATE ACQD: 01Jul63 ENCL: 00

SUB CODE: CO,SD NO REF SOV: 002 OTHER: 006

ja/ja
Card 2/2

ACCESSION NR: AP4042891 S/0108/64/019/007/0033/0038

AUTHOR: Fel'dshteyn, A. L. (Active member)

TITLE: Nonreciprocal nonuniform lines

SOURCE: Radiotekhnika, v. 19, no. 7, 1964, 33-38

TOPIC TAGS: nonuniform line, nonreciprocal line, nonreciprocal line theory

ABSTRACT: A long line with continuously varying (in the direction of propagation) nonreciprocal parameters is called a "nonreciprocal nonuniform line." In such a line, the attenuation and phase shift depend on the direction of transmission (ferrite, plasma, etc.). By considering the line as a ladder of quadripoles and by separating the reciprocal part from the nonreciprocal in each section, a theory of such lines is developed. The reciprocal part of a section is characterized by the half-sum of the conventional propagation constants $\gamma_1(x)$ and $\gamma_2(x)$, while the nonreciprocal part is characterized by their half-difference. The integrals of

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ACCESSION NR: AP4042891

these quantities enter the formulas describing the line. Integral and differe ıtial formulas for the matrices of transmission and dissipation of the line are developed. "The author wishes to thank V. G. Kalina for discussing the results of the work." Orig. art. has: 1 figure and 30 formulas.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi (Scientific and Technical Society of Radio Engineering and Electrocommunication)

SUBMITTED: 07Feb63 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 000

Card 2/2

FEL'DSHTEYN, Aleksandr L'vovich; YAVICH, Lev Rafaelovich. Prinimala uchastiye PROKHOROVA, N.I.; YAKOBSON, A.Kh.

[Synthesis of four-terminal and eight-terminal microwave networks] Sintez chetyrekhpoliusnikov i vos'mipoliusnikov na SVCh. Moskva, Izd-vo "Sviaz'," 1965. 352 p. (MIRA 18:5)

L 26415-66 EWA(h)/EWT(1)

ACC NR: AM5018516 Monograph UR/ 60 BT1

Fel'dshteyn, Aleksandr L'vovich; YAvich, Lev Rafaelovich

Synthesis-high frequency four-terminal and eight-terminal networks (Sintez chetyrekhpolyusnikov i vos'mipolyusnikov na SVCh) Moscow, Izd-vo "Svyaz" , 1965. 352 p. illus., biblio. 5700 copies printed.

TOPIC TAGS: communication network, array synthesis, superhigh frequency, SHF communication, transmission line, waveguide coupler

PURPOSE AND COVERAGE: This book is intended as a manual for scientists, technicians, and college students concerned with the theory and operation of transmission lines. Theoretical and design problems concerning filters, matching devices, directional couplers, and other similar devices. The authors thank O. I. Mazepova, Ye. V. Solov'yeva, A. V. Ivakina, V. P. Smirnov, R. Sh. Shakirova, and N. I. Prokhorova for their assistance.

TABLE OF CONTENTS [abridged]:

Card 1/2 UDC: 621.372.5/6:621.3.029.6.001.24

L 26415-66

ACC NR: AM5018516

SUB CODE: 09/ SUBM DATE: 09Apr65/ ORIG REF: 080/ OTH REF: 033

Card 2/2 CC

KUNIN, V.M., red.; FEL'DSHTEYN, A.M., red.

[Manufacture and use of arbolite] Proizvodstvo i primenenie arbolita. Moskva, 1962. 50 p. (MIRA 17:6)

1, Giprosel'stroy.

GINZBURG-RAKHMILEVICH, Sh.G.; FEL'DSHTEYN, A.S. kandidat meditsinskikh nauk, glavnyy vrach.

Therapy of lingering and chronic dysentery with Chernokhvostov's alcohol vaccine. (Authors' abstract). Zhur.mikrobiol.epid.i immun. no.3:40-41 Mr '53. (MLRA 6:6)

1. Chetvertaya infektsionnaya bol'nitsa Saratova. (Dysentery)

FEL'DSHTEYN, B.YE.

FEL'DSHTEYN, B.Ye., inzh.; GRINKEVICH, I.V., inzh.

Attachment for machining multifaced parts. Mashinostroitel' no.1:20 Ja '58. (MIRA 11:1)

(Lathes--Attachments)

[illegible], N. I.

Laboratory of Cutting, Gor'kiy Automobile Plant imeni Molotov (-1944-)

Candidate in Technical Sciences

"Using a Vertical Drilling Machine for Boring and Cutting Internal Threads in Cylinders of Large Diameter." Stanki I Inst. Vol. 15 No. 4-5, 1944

BR 52059019

FEL'DSHTEYN, E. I.,

Candidate of Technical Sciences

"Checking the Geometrical Factors of Cutting Tools without Special Measuring Instruments." Stanki I Instrument Vol 15, Nos. 7-8, 1944

BR 52059019

FEL'DSHTEYN, E. I.; RYCHKOV, A. A., Engineer

Mbr., Gor'kiy Automobile Plant imeni Molotov (-1945-)

Candidate of Technical Sciences

"The Experience of Introducing Chemical Processing of Cutting Tools into Production," Stanki I Instrument 16, Nos. 4-5, 1945

BR-52059019

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215-G. (Book) Metody Opredeleniia Obrabatyvaemosti Metallov. (Methods of Determining the Workability of Metals.) E. I. Fel'dshtein. 143 pages. 1946. State Scientific-Technical Publishing House for Machine-Construction Literature, Moscow, U.S.S.R.

Reviews classical methods which entirely reproduce the corresponding type of machining, accelerated methods of investigation based on short-time tests, and the relation between mechanical properties of metals and their workability. Emphasis is on "face machining"; and experimental verification of applicability of this method is presented. 75 ref. (G17, Q23)

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Chromium plating of cutting tools. Stan. i instr. 18 no.4: 24-26 Ap '47. (MLRA 7:11)
(Machine tools) (Chromium plating)

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The influence of heat treatment and the microstructure of steel on the smoothness of machined surfaces. E. I. Fel'dshtein. *Vestnik Mashinostroeniya* 28, No. 12, 26–36 (1948).—Microstructures which guarantee the best finished surfaces in the majority of finishing operations (conducted at low cutting speeds) are thin-laminar and sorbite-shaped pearlite and ferrite in the form of a thin network and grains of av. size.

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21767 FEL'DSHTEYN, E. I. Obrabaty vaye most' sredneyglerodistykh konstruktsonnykh staley. V sb: Problemy konstruktsionnoy stali. M. -L., 1949, s. 120-40.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

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"Determination of the Characteristic Machinability of Metals," Stanki i Instrument 20 (1949) pp 17/18.

Comments and Evaluation B-78524, 8 Sep 54

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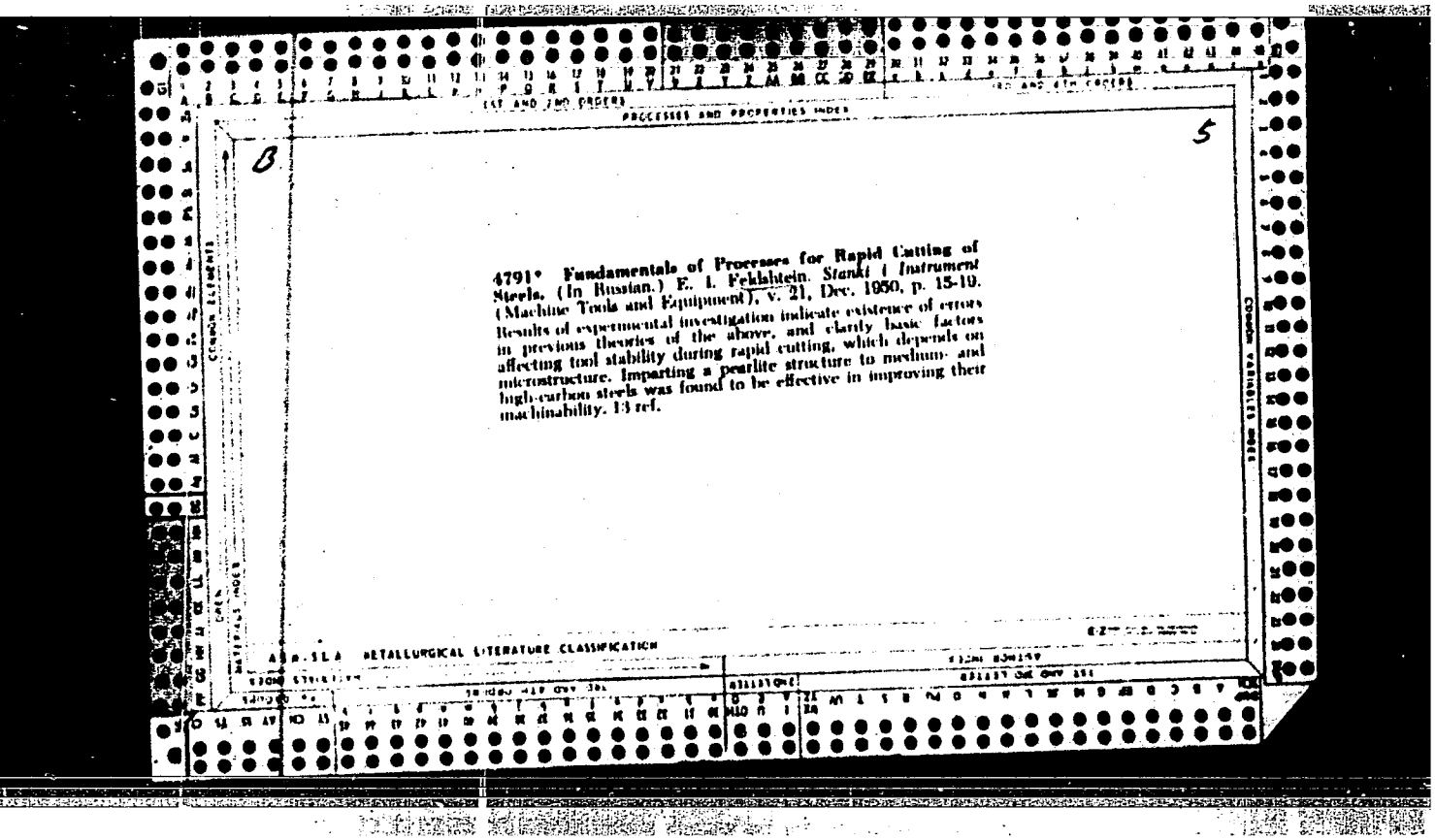
Obrabatyvaemost' stalei pri skorostnom rezanii. (Vestn. Mash., 1950, no. 9, p. 43-48) Includes bibliography.

Machinability of steel during high-speed cutting.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.



PROCESSES AND PROPERTIES INDEX

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4791* **Fundamentals of Processes for Rapid Cutting of Steels.** (In Russian.) E. I. Feklishtein. *Stanki i Instrument* (Machine Tools and Equipment), v. 21, Dec. 1950, p. 15-19. Results of experimental investigation indicate existence of errors in previous theories of the above, and clarify basic factors affecting tool stability during rapid cutting, which depends on microstructure. Imparting a pearlite structure to medium- and high-carbon steels was found to be effective in improving their machinability. 13 ref.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 482-I

BOOK Call No.: AF639674

Authors: BASOV, M. I., Kand. of Tech. Sci., FEL'DSHTEYN, E. I., Kand. of Tech. Sci., BRAKHMAN, L. A., Eng., STIGNEYEV, YA. F., Eng., KRYSINA, YE. V., Eng., BOL'SHAKOV, V. M., Tech., BYCHKOV, P.P., Eng., BABYLOV, G. I.

Full Title: CUTTING TOOLS WITH HARD-ALLOY MULTIPLE BLADE INSERTS

Transliterated Title: Rezhushchiye instrumenty s mnogolezviynymi vstavkami iz tverdogo splava

PUBLISHING DATA

Originating Agency: None

Publishing House: State Scientific and Technical Publishing House of Machine-Building Literature (Mashgiz)

Date: 1952 No. pp.: 110 No of copies: 8,000

Editorial Staff

Editor: Basov, M. I., Kand. of Tech. Sci.

TEXT DATA

Coverage: This monograph is the collective work of authors from the Institute of the Organization of the Automobile Industry, the Gor'kiy Automobile Plant im. Molotov (ZIM) and the Moscow Automobile Plant im. Stalin (ZIS). The authors describe the designs of modern cuttingtools with hard-alloy multiple blade inserts, the results of their study and experience with the tools' cutting properties, and the advantages of

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these tools. Detailed descriptions of each tool type are given, with instructions for design, and operation and practical use. The book contains data on the efficiency of the new tool designs inline production, and recommendations with reference to the operating conditions of these tools, as well as many illustrations, tables and diagrams. Of possible interest is the description of the electric spark technique on the OKB MSS single-circuit bench lathe used in the First State Bearing Plant im. Kaganovich (pp. 87-88, with illustrations).

Table of Contents

Rezhushchiye instrumenty s mnogolezviynymi
vstavkami iz tverdogo splava

AID 482-I
PAGES

Purpose: The book is intended for engineers, technicians and Stakhanovites in machine-building plants.
Facilities: "Orgavtoprom" (Organization of the Automobile Industry) Institute; ZIM (Gor'kiy Automobile Plant im. Molotov); ZIS (Moscow Automobile Plant im. Stalin)
No. of Russian and Slavic References: None
Available: A.I.D., Library of Congress

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1. FEL'DSHTEYN, YE. I.

2. USSR (600)

4. Metals

7. Wearing property of metals. Vest mash No 11 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

1. FEL'DSHTEYN, Ya. I.; BOL'SHAKOV, V. M.; STIGNEYEV, Ya. F.

2. USSR (600)

4. Metal Cutting

7. Tools with removable hard-alloyed cutting bit. Stan. i instr. 23, No. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

FEL'DSHTEYN, E. I.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 443 - I

BOOK Call No.: TN731.F4

Author: FEL'DSHTEYN, E. I., Kand. of Tech. Sci.

Full Title: MACHINABILITY OF STEELS IN CONNECTION WITH THE CONDITIONS OF HEAT TREATMENT AND WITH THE MICROSTRUCTURE

Transliterated Title: Obrabatyvayemost' staley v svyazi s usloviyami termicheskoy obrabotki i mikrostrukturoy

Publishing Data

Originating Agency: None

Publishing House: State Scientific and Technical Publishing House of Literature on Mechanical Engineering and Shipbuilding ("Mashgiz")

Date: 1953 No. pp.: 255 No. of copies: 4,000

Editorial Staff

Editor: Klushin, M. I., Kand. of Tech. Sci.

Appraiser: Granovskii, G. I., Prof., Dr. of Tech. Sci.

The author dedicates this work to the staff of the Gor'kiy Automobile Plant im. V. M. Molotov and expresses his thanks to M. I. Klushin and Ya. F. Stigneyev, supervisors in the Laboratory of Metal Cutting, and to engineers and technicians in machine shops of this plant.

Text Data

Coverage: This book is the result of the author's ten-year investigations of the machinability of structural and tool steels in relation to the conditions of heat treatment and to the microstructure. These

Evaluation B-80557

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investigations include the studies of the three basic factors of machinability: cutting speed, cleanness of finished surfaces and cutting pressure. Since the machinability of metals is not an abstract problem, it requires for its solution a wide range of experimental data. The main task of the author was not a simple gathering of information, but the establishment of general laws controlling these data, and their use for the practical needs of the industry. A specific feature of these investigations is the fact that they have been checked in industrial conditions. The author maintains that the correctness of the conclusions and their importance for the industry were proved by numerous tests and observations in machine shops of the Gor'kiy Automobile Plant.

Names of Russian scholars (since 1870) and of Soviet scientists (during the Stalin Five-Year Plans and in the postwar years), and discussions of their valuable contributions in this field are scattered through the book. Foreign scientists, particularly American and English, are mentioned with sharp criticism of their theories (e.g., p. 49-50). The book is provided with detailed descriptions of various kinds of steels, many illustrations of their microstructure and of the cleanness and roughness of surfaces, diagrams, temperature curves, numerous tables, sketches of machine elements, etc. The

Obrabatvyayemost' staley v svyazi s usloviyami termicheskoy obrabotki i mikrostrukturoy AID 443 - I

work is based on a vast amount of literature (from 1870 to 1951).

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